CANADA - BRITISH COLUMBIA

AGREEMENT RESPECTING

Floodplain Mapping

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STEERING COMMITTEE

CANADA - BRITISH COLUMBIA AGREEMENT

RESPECTING FLOODPLAIN MAPPING

Canada

D.W. Farley
C.H. Pharo

British Columbia

E.W.D. Bonham
R.W. Baiser

Dear Mr. Minister:

The Steering Committee responsible for the administration of the Agreement Respecting Floodplain Mapping in the Province of British Columbia herewith submits its 3rd Annual Report for the year ending March 31, 1991 in accordance with the requirements of the Agreement signed December 3, 1987.

Respectfully submitted,

E.W.D. Bonham, Chairman
Steering Committee

93-01118/

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1.0 INTRODUCTION

The 10-year Canada-British Columbia Agreement Respecting Floodplain Mapping was signed on December 3, 1987 to provide information on the extent of floodplain areas within British Columbia. The Agreement provides for the determination of the location and extent of selected floodplain areas, for the designation or interim designation by the Minister of the Environment for Canada and the Minister of Environment for British Columbia of the mapped floodplains. The Agreement also provides for the preparation and distribution of information about the floodplains to zoning authorities, government agencies, and to the general public.

This report summarizes the progress made during the third year of the Agreement. Up to March 31, 1991, expenditures under the Program amounted to $3,204,750. A total of fifty-three areas have been designated or interim designated by the Ministers under the terms of the Agreement. A significant portion of the technical work under the Agreement was assigned to the private sector under contract.

2.0 ORGANIZATION

Under the terms of the Agreement, a four-member Steering Committee was established to be responsible for its general administration and to provide overall co-ordination and direction of the floodplain mapping program. A Technical Co-ordinator and Secretary to the Steering Committee was also appointed. The Steering Committee reports through its Chairman to the Minister of Environment for British Columbia and to the Minister of the Environment for Canada.

A majority of the base mapping production is assigned to the private sector under contract to the Surveys and Resource Mapping Branch, British Columbia Ministry of Crown Lands. Engineering study contracts are managed by the Water Management Division, British Columbia Ministry of Environment. The Steering Committee assigned co-ordination between the Parties of the public information program under the Agreement to selected staff members.

Figure 1 is an illustration of the organization under the Agreement.

3.0 STEERING COMMITTEE MEMBERSHIP

The Steering Committee consists of two federal and two provincial members. The Steering Committee, which met on March 22, 1991, consists of the following:

CANADA

Dr. Chris H. Pharo, Manager
Integrated Programs Branch
Inland Waters
Pacific and Yukon Region
Environment Canada
North Vancouver, B.C.

Mr. D.W. Farley, Chief
Water Management Systems Division
Water Planning and Management Branch
Inland Waters Directorate
Environment Canada
Ottawa, Ont.

BRITISH COLUMBIA

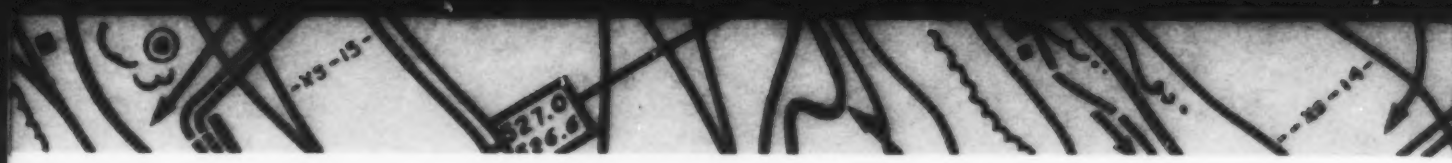
Mr. E.W.D. Bonham (Chairman)
Director, Engineering Branch
Water Management Division
Ministry of Environment
Victoria, B.C.

Mr. G.T. Sawayama, Director
Surveys and Resource Mapping Branch
Ministry of Crown Lands
Victoria, B.C.
(to January 24, 1991)

Mr. R.W. Balser
TOPO/GIS Section Manager
Surveys and Resource Mapping Branch
Ministry of Crown Lands
Victoria, B.C.
(from January 24, 1991)

Mr. R.W. Nichols, P. Eng., Water Management Division, Ministry of Environment was appointed by the Ministers as Technical Co-ordinator and Secretary to the Steering Committee.

Staff meetings were held in Victoria on November 22, 1990 and in Vancouver on February 19, 1991 with Mr. E.W.D. Bonham and Dr. C.H. Pharo in attendance. The meetings were held to discuss progress and expedite communications with respect to the year's activities.



4.1 HIGHLIGHTS

A total of three projects were designated or interim designated by the Ministers during 1990/91.

An additional nine projects were recommended by the Steering Committee to the Ministers for designation or interim designation by September, 1991.

Engineering studies were completed or underway in eight project areas.

River surveys were completed or underway in four project areas.

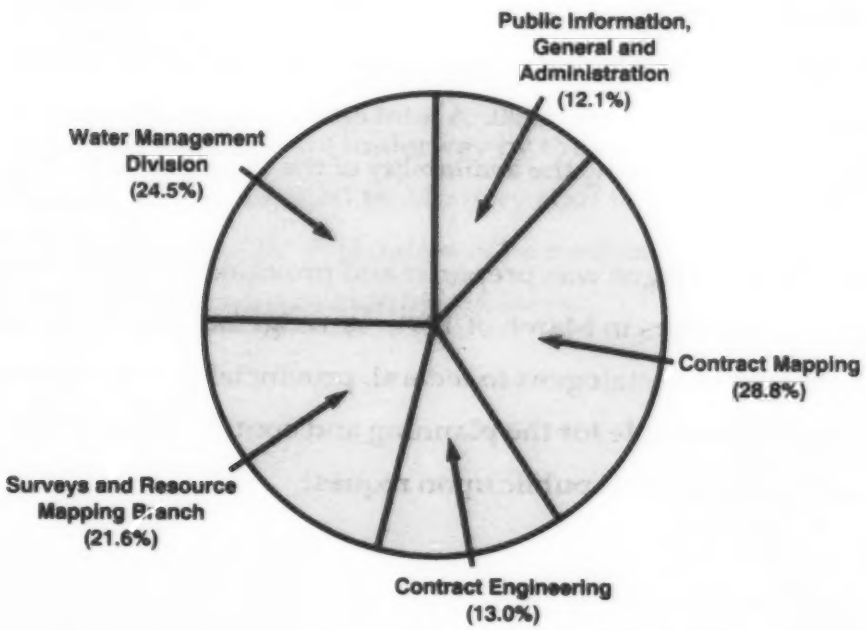
Base mapping activities involved ten project areas.

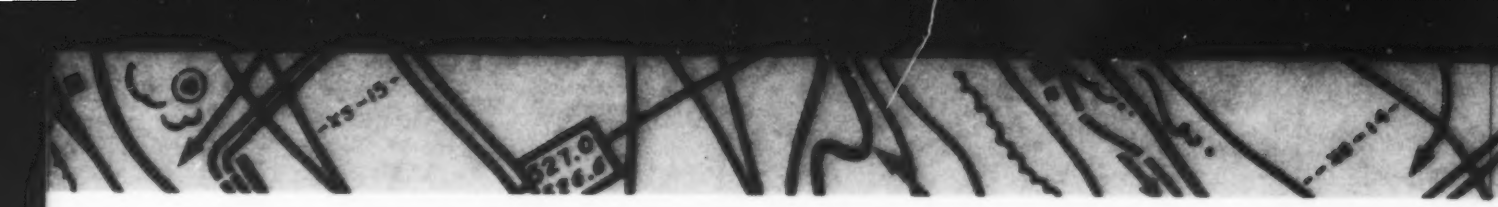
A videocassette for public information purposes was completed and copies prepared for general distribution.

A Key Plan catalogue of each of the designated or interim designated floodplain areas was completed and arrangements were made for distribution to floodplain mapping users.

4.2 EXPENDITURES

Total expenditures for the 1990/91 fiscal year amounted to $1,125,895. Appendix 1 shows the 1990/91 expenditures by projects. The Federal share of this expenditure was $500,000 in accordance with the Agreement. Documentation and records of the expenditures have been examined by auditors in accordance with requirements of the Agreement. A total of three base mapping and five airphoto and ground control contracts were undertaken by private sector firms. Engineering study contracts were undertaken by consultants for a total of four projects. The 1990/91 expenditures under the program were distributed as follows:


Public Information, General and Administration (12.1%)
Water Management Division (24.5%)
Contract Mapping (28.8%)
Surveys and Resource Mapping Branch (21.6%)
Contract Engineering (13.0%)



4.3 PUBLIC INFORMATION

Public information has been ongoing since 1974 with respect to the Provincial Floodplain Mapping Program. Federal and provincial ministries, agencies, and municipalities affected by the 1990/91 designations or interim designations were so informed.

A total of 151 requests were received by Maps B.C. involving the issuing of 1,400 floodplain mapping sheets. In addition, numerous "over the counter" inquiries related to the floodplain mapping program are processed in federal, provincial and municipal offices throughout the Province.

The publicity video of the program was completed and copies for general distribution prepared, including 30 copies forwarded to the Federal Government in November 1990. A joint News Release was issued in January 1991 announcing the availability of the video to the public.

The Key Plan catalogue was prepared and provided to the Steering Committee members in March of 1991. Arrangements were made for distribution of 130 catalogues to federal, provincial and municipal authorities responsible for the planning and control of flood hazard areas and to the general public upon request.

4.4 ENGINEERING STUDIES

In March, 1990, nine projects were recommended by the Steering Committee to the Ministers for designation or interim designation:

	PROJECT	NO. OF DRAWINGS
A.2.9	North and South Alouette	2
A.3.7	Stuart River and Lake	7
A.3.8	Salmon River (Salmon Arm to Spa Creek)	6
A.3.39	Salmo River	9
A.3.49	Seymour River	2
A.3.51	Courtenay, Puntledge, Tsolum Rivers	7
A.3.54	Chemainus River	3
A.3.62	Christina Lake	5
A.3.83	Kootenay River	8

Two additional studies were underway by the end of the fiscal year. Highwater data was obtained by Ministry staff in many areas of the Province during 1990/91. This data will be used in future mapping projects or in monitoring of existing projects.

4.5 RIVER SURVEYS

River survey data obtained by the Ministry of Environment staff for four projects undertaken in 1990/91 are listed as follows:

	PROJECT
A.2.3	Kettle and Granby Rivers
A.3.21	Zeballos River
A.3.40	Tahsis River
A.3.47	Serpentine-Nicomekl Rivers

The Bear River survey (A.3.46) was postponed due to a river dredging project which took place in late 1990.

4.6 BASE MAPPING

Field control and air photo contracts were completed for the following projects in 1990/91.

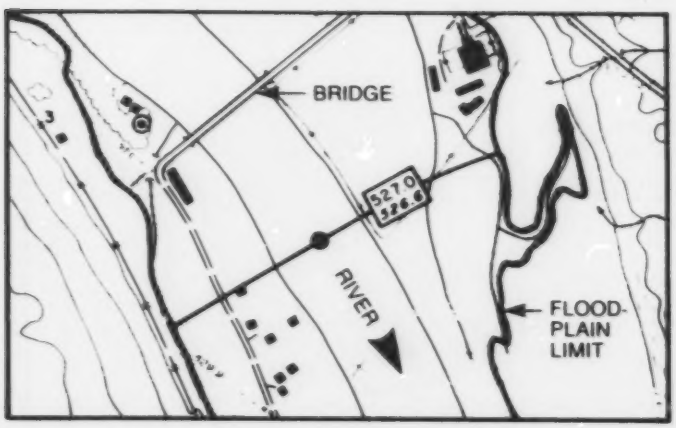
	PROJECT
A.3.16	Naver Creek *
A.3.45	Seymour River (Vancouver Area)
A.3.56	Little Qualicum River
A.3.58	Somass River
A.3.63	Shuswap River
A.3.67	Chilako River

* Field Control Only

Base mapping is scheduled for completion for the Cowichan River (A.3.12) and Bear River (A.3.46) projects. The Similkameen project (A.2.6) at Keremeos is estimated to be 50% complete and at Princeton-Hedley is 80% complete. These projects are scheduled to be completed by June of 1991.

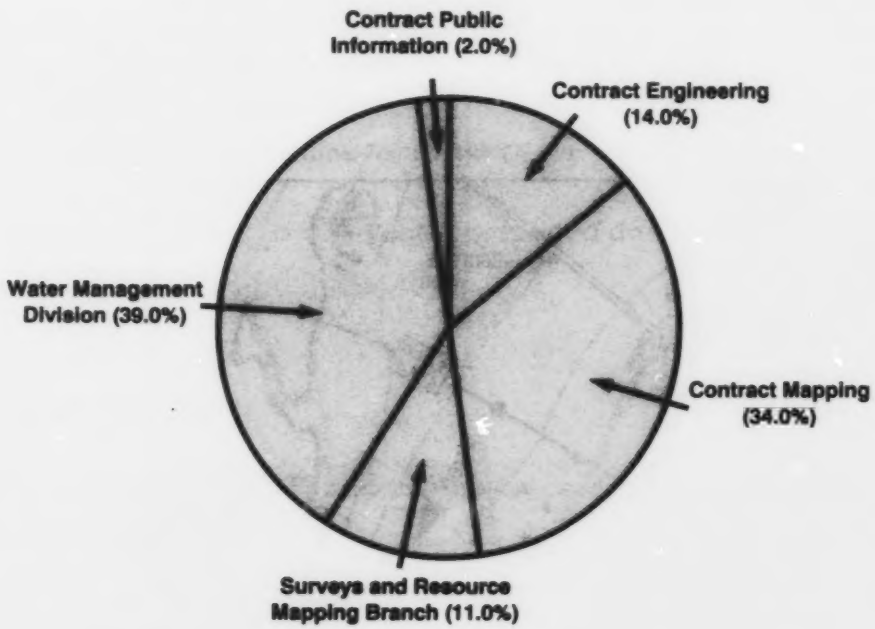
5.0 DESIGNATIONS

Appendix 2 is a list of the fifty-three floodplain areas designated or interim designated by the Ministers by March 31, 1991. Three of these areas, involving nineteen mapping sheets, were designated (or interim designated) during 1990/91 as indicated in Appendix 2.



6.0 1991/92 PROGRAM APPROVAL

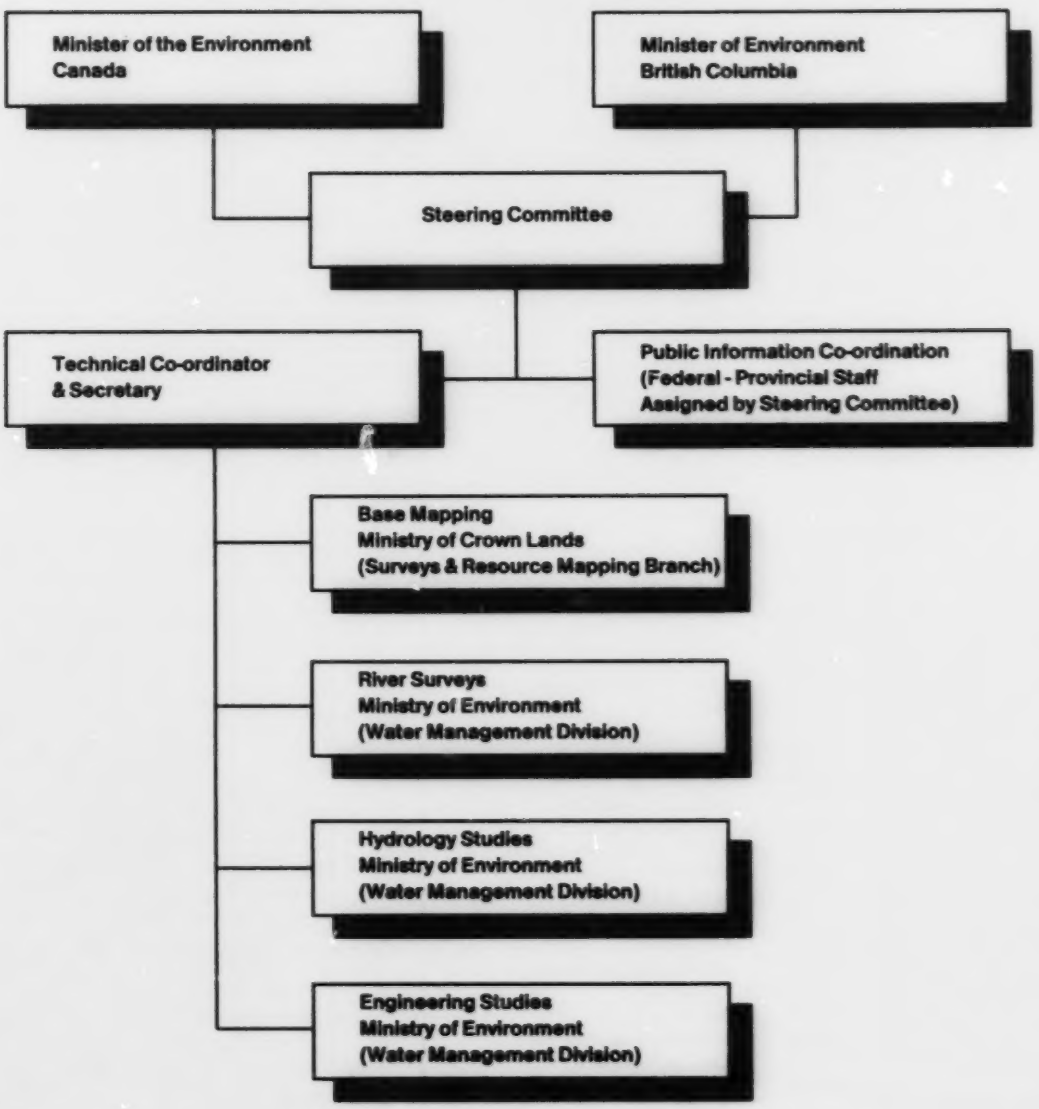
The Steering Committee approved a program of work and budget for the 1991/92 fiscal year as summarized below: **Total $1 million.**


Contract Public Information (2.0%)
Contract Engineering (14.0%)
Water Management Division (39.0%)
Contract Mapping (34.0%)
Surveys and Resource Mapping Branch (11.0%)

The Ministers were requested to approve additions to Schedule A.3 to permit a rational assessment of the future mapping sequence based on all known potential floodplain mapping areas in British Columbia.

Appendix 3 and 4 list the areas identified in Schedule A.2 and A.3 of the Agreement along with the activities completed and proposed for the 1991/92 Program.

FIGURE 1
ORGANIZATION
CANADA - BRITISH COLUMBIA
FLOODPLAIN MAPPING AGREEMENT



APPENDIX 1

EXPENDITURE SUMMARY 1990 - 1991

PROJECT		TOTAL EXPENDITURE ($)
A.1.14	North Thompson R.	36.80
A.1.15	Salmon/White R.	30,763.92
A.1.34	Englishman R.	68.45
A.1.35	Vedder R.	17,283.75
A.2.3	Kettle/Granby R.	57,494.42
A.2.4	Nicola R. at Merritt	720.12
A.2.6	Similkameen R.	159,603.00
A.2.9	Alouette R.	3,737.98
A.2.16	Lillooet R.	813.34
A.3.2	Beaver Cr.	229.18
A.3.5	Slocan R.	522.52
A.3.6	Elk R.	2,360.42
A.3.7	Stuart R.	39,454.82
A.3.8	Salmon R.	45,273.46
A.3.9	Okanagan R.	6,318.34
A.3.10	Campbell/Quinsam R.	528.64
A.3.11	Quatse R.	298.15
A.3.12	Cowichan R.	154,326.23
A.3.13	Nechako R.	11,680.18
A.3.16	Chilliwack R.	26,450.03
A.3.21	Zeballos R.	13,686.45
A.3.28	Skeena R.	1,654.48
A.3.29	Lakelse R.	290.94
A.3.31	Bonaparte R.	3,406.91
A.3.39	Salmo R.	58,328.73
A.3.40	Tahsis R.	20,382.59
A.3.43	Nicomekl R.	29,464.70
A.3.45	Lynn/Capilano/Seymour R.	10,460.00
A.3.46	Bear R.	58,892.07
A.3.47	Serpentine/Nicomekl R.	30,369.24
A.3.48	Williams Lake and R.	7.80
A.3.49	Seymour R./Shuswap L.	59.10
A.3.50	Whistler Village Area	14,751.15
A.3.51	Tsolum/Puntledge R.	104.42
A.3.54	Chemainus R.	786.83
A.3.55	Sooke R.	1,461.05
A.3.56	Little Qualicum R.	18,267.75
A.3.58	Somass R.	26,241.19
A.3.62	Christina L.	3,347.44
A.3.63	Shuswap R.	46,210.73
A.3.67	Chilako R.	39,455.00
A.3.69	Naver Cr.	6,746.71
A.3.83	Kootenay R. at Canal Flats	26,051.56
A.3.84	Duncan/Lardeau R.	6,875.00
A.3.87	Quesnel R.	11,513.51
	Total Project	986,779.10
	General & Administration	139,116.56
	Total Expenditures	$1,125,895.66

APPENDIX 2 (PAGE 1 OF 2)

DESIGNATED FLOODPLAIN AREAS IN THE PROVINCE OF BRITISH COLUMBIA

DESIGNATED AREA (December 3, 1987) (From Schedule A.1 of the Agreement)		Issue Date
A.1.1	Chilliwack: Vedder River to Slesse Creek	81-02
A.1.2	Columbia River: Columbia-Windermere Lakes	80-10
A.1.3	Columbia River at Golden	79-02
A.1.4	Columbia River: Windermere Lake-Radium	82-04
A.1.5	Coquitlam River: Coquitlam Lake-Fraser River	76-10
A.1.6	Courtenay River	79-07
A.1.7	Cowichan Lake	84-06
A.1.8	Cowichan & Koksilah Rivers at Duncan	81-05
A.1.9	Eagle River	79-01
A.1.10	Elk River at Fernie	79-05
A.1.11	Elk River at Sparwood	80-03
A.1.12	Kitimat River	82-03
A.1.13	Kootenay River: Kootenay Lake-U.S. Border	81-08
A.1.14	North Thompson River: Kamloops-Vavenby	82-12
A.1.15	Salmon & White Rivers	80-12
A.1.16	Shuswap River: Mara Lake to Mabel Lake	80-06
A.1.17	Skeena River: Lakelse-Terrace-Usk	82-10
A.1.18	South Thompson River: Kamloops-Chase	76-06
A.1.19	Thompson River: Kamloops Area	76-06
A.1.20	Tulameen River: Coalmont-Tulameen	81-04
A.1.21	Okanagan Lake: Westbank to Peachland	82-09
A.1.22	Columbia River at Revelstoke	83-11
A.1.23	Fraser and Nechako Rivers: Prince George	83-09
A.1.24	Kaslo River at Kaslo	84-03
A.1.25	Squamish River	83-10
A.1.26	Goat River	84-09
A.1.27	Mission Creek	84-09
A.1.28	Nanaimo River	84-05
A.1.29	Nechako River at Vanderhoof	84-07
A.1.30	Bulkley and Telkwa Rivers	84-12
A.1.31	Bulkley River at Houston	85-10
A.1.32	Cheakamus River	86-04
A.1.33	Zymoetz (Copper) River	85-06
A.1.34	Englishman River	85-04
A.1.35	Vedder River (Vedder Canal to Vedder Crossing)	85-12
DESIGNATED AREA (September 30, 1988) (From Schedule A.2 of the Agreement)		**Issue Date**
A.2.1	Fraser and Quesnel Rivers at Quesnel*	87-05
A.2.5	Shawnigan Lake*	79-09
A.2.7	Coquihalla River at Hope*	85-06
A.2.8	Oyster River*	84-05
A.2.10	Salmon River near Prince George*	86-01
A.2.11	Peace River*	85-12
A.2.12	Fraser River near Hope*	87-07
A.2.13	Crawford Creek	87-06
A.2.15	Bulkley River: Quick Area*	86-11

(*Interim Designation)

APPENDIX 2 (PAGE 2 OF 2)

DESIGNATED FLOODPLAIN AREAS

IN THE PROVINCE OF BRITISH COLUMBIA

DESIGNATED AREA (September 30, 1989)		Issue Date
A.3.1	Bella Coola River*	89-09
A.3.3	Nicola River - Spences Bridge to Canford*	89-09
	- Canford to Nicola Lake	89-09
A.3.6	Elk River near Elkford*	89-09
DESIGNATED AREA (March 31, 1990)		**Issue Date**
A.3.2	Beaver Creek*	90-03
A.3.5	Slocan River	90-03
A.3.10	Campbell/Quinsam Rivers	90-03
DESIGNATED AREA (September 30, 1990)		**Issue Date**
A.2.16	Lillooet River	90-09
A.3.29	Lakelse River and Lake	90-09
A.3.48	Williams Lake and River	90-09

(*Interim Designation)

APPENDIX 3

SCHEDULE A.2

Area to be Remapped	Activity				
	Mapping				
	Air Photo	Field Control	Base Mapping	River Surveys	Engineering Studies
A.2.2 Fitzsimmons Creek (Whistler area)		(See Appendix 4 - A.3.50)			
A.2.3 Kettle and Granby (Grand Forks)	1988/89	1988/89	1989/90	1990/91	(1991/92)
A.2.4 Nicola and Coldwater (Merritt)		(See Appendix 4 - A.3.3)			
A.2.6 Similkameen River (U.S. Border-Princeton)	1988/89	1989/90	(1991/92)	-	-
A.2.9 Alouette River	C	C	1988/89	C	1990/91
A.2.14 Bella Coola River		(See Appendix 4 - A.3.1)			
A.2.16 Lillooet River	C	C	C	C	1989/90-D

C = Completed prior to the Agreement
D = Designated or Interim Designated

APPENDIX 4 (PAGE 1 OF 2)

SCHEDULE A.3

Area	Activity				
	Mapping				
	Air Photo	Field Control	Base Mapping	River Surveys	Engineering Studies
1. Bella Coola River	C	C	C	C	1988/89 -D
2. Beaver Creek near Fruitvale	C	C	C	C	1988/89 -D
3. Nicola River	C	C	C	C	1988/89 -D
4. Coldstream Creek near Vernon	-	-	-	-	-
5. Slocan River	C	C	C	C	1988/89 -D
6. Elk River (ext. of existing mapping)	C	C	C	C	1988/89 -D
7. Stuart River	C	C	C	1989/90	1990/91
8. Salmon River (Salmon Arm to Spa Creek)	C	C	C	C	1990/91
(Spa Creek to Falkland)	C	C	C	C	(1991/92)
9. Okanagan River	C	C	C	C	(1991/92)
10. Campbell and Quinsam Rivers - Van. Island	C	C	C	C	1988/89 -D
11. Keogh and Quatse Rivers - Van. Island	C	C	C	1988/89	(1991/92)
12. Cowichan River (ext. of existing mapping)	1989/90	1989/90	1990/91	-	-
13. Nechako River (ext. of existing mapping)	C	C	C	-	-
14. Kelowna Creek	-	-	-	-	-
15. Fortune and Deep Creeks near Vernon	-	-	-	-	-
16. Chilliwack River (ext. of existing mapping)	-	-	-	-	-
17. Duhamel Creek	C	C	1988/89	-	-
18. Shuttleworth Creek near Penticton	-	-	-	-	-
19. Silverton Creek - Slocan Lake	C	C	1988/89	-	-
20. Carpenter Creek - Slocan Lake	-	-	-	-	-
21. Zeballos River - Van. Island	C	C	1988/89	1990/91	(1991/92)
22. Bridge Creek	-	-	-	-	-
23. Nakusp Creek	-	-	-	-	-
24. Bessette Creek	-	-	-	-	-
25. Gold River - Van. Island	-	-	-	-	-
26. Chilanko River - Cariboo	-	-	-	-	-
27. Dawson Creek	-	-	-	-	-
28. Skeena River - Usk to Hazelton	C	C	C	(1991/92)	-
29. Lakelse Lake near Kitimat	C	C	C	1988/89	1989/90-D
30. Thompson River at Ashcroft	-	-	-	-	-
31. Bonaparte River at Cache Creek	(1991/92)	(1991/92)	-	-	-
32. Centurion Creek at Chetwynd	-	-	-	-	-
33. Clinton Creek at Clinton	-	-	-	-	-
34. Harrison Lake	-	-	-	-	-
35. Fraser River at Lillooet	-	-	-	-	-
36. Fraser River at Lytton	-	-	-	-	-
37. Fraser River at McBride	-	-	-	-	-
38. Kettle River at Midway	(1991/92	(1991/92)	-	-	-
39. Salmo River	C	1988/89	1989/90	1988/89	1990/91
40. Tahsis River - Van. Island	C	C	1988/89	1990/91	(1991/92)
41. Swift Creek at Valemont	-	-	-	-	-
42. Boundary Creek at Greenwood	-	-	-	-	-
43. Nicomekl River at Langley	-	-	-	-	-
44. Mark Creek at Kimberley	C	C	C	-	-
45. Lynn Creek, Capilano River, Seymour River	1990/91	1990/91	-	-	-
46. Bear River at Stewart	1989/90	1989/90	1990/91	(1991/92)	-
47. Serpentine-Nicomekl Rivers	1988/89	1988/89	1989/90	(1991/92)	-
48. San Jose River at Williams Lake	C	C	C	C	1989/90-D

C = Completed Prior to the Agreement
D = Designated or Interim Designated

APPENDIX 4 (PAGE 2 OF 2)

SCHEDULE A.3

Area	Activity				
	Mapping			River Surveys	Engineering Studies
	Air Photo	Field Control	Base Mapping		
49. Seymour River at Seymour Arm	C	C	C	C	1989/90
50. Whistler Area	C	C	C	1988/89	(1991/92)
51. Tsolum River - Van. Island	C	C	1988/89	1988/89	1989/90
52. Vernon Creek	-	-	-	-	-
53. Okanagan Lake (ext. of existing mapping)	-	-	-	-	-
54. Chemainus River	C	C	C	C	1989/90
55. Sooke River	C	C	C	(1991/92)	-
56. Little Qualicum River	1990/91	1990/91	-	-	-
57. French Creek	-	-	-	-	-
58. Somass River	1990/91	1990/91	(1991/92)	-	-
59. Kanaka, Wilson and Chapman Creeks	C	C	C	-	-
60. Hatzic Lake	C	C	C	C	-
61. Stawamus River	C	C	C	C	-
62. Christina Lake	C	C	C	N/A	1990/91
63. Shuswap River (Mara to Sugar Lake)	1990/91	-	-	-	-
64. Heffley Creek	-	-	-	-	-
65. Barriere River	-	-	-	-	-
66. North Thompson River (ext. to Vavenby)	-	-	-	C	-
67. Chilako River (near Prince George)	1990/91	1990/91	(1991/92)	-	-
68. Kitsumkalum River (near Terrace)	-	-	-	-	-
69. Naver Creek (near Hixon)	1989/90	1990/91	-	-	-
70. Silverdale Creek	-	-	-	-	-
71. Fraser River	-	-	-	-	-
72. Nechako River	C	-	-	-	-
73. Endako River	-	-	-	-	-
74. Willow River	-	-	-	-	-
75. Crooked River	-	-	-	-	-
76. Bulkley River (Quick to Houston)	-	-	-	-	-
77. Pine River	-	-	-	-	-
78. Muskwa and Prophet Rivers	-	-	-	-	-
79. McLennan River	-	-	-	-	-
80. Halfway River	-	-	-	-	-
81. Columbia River (U.S. border to Trail)	C	-	-	-	-
82. Kootenay River (Columbia R. to Kootenay L.)	-	-	-	-	-
83. Kootenay River (Canal Flats to Ft. Steele)	C	C	C	1989/90	1990/91
84. Duncan and Lardeau Rivers	1988/89	1988/89	(1991/92)	-	-
85. Columbia River (Donald Station to Radium)	-	-	-	-	-
86. Fraser River (Tidewater to Hope)	-	-	-	-	-
87. Fraser and Quesnel Rivers (at Quesnel)	C	C	C	1989/90	(1991/92)
88. Goat River and Kitchener Creek	-	-	-	-	-
89. Elk River near Sparwood	C	C	C	(1991/92)	-
90. Michel Creek near Sparwood	C	C	C	(1991/92)	-
91. Moyie River near Yahk	-	-	-	-	-
92. Fraser River at Prince George	C	C	C	-	-

C = Completed Prior to the Agreement
D = Designated or Interim Designated